CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. 93-004

SITE CLEANUP REQUIREMENTS FOR:

ROHM AND HAAS COMPANY

OCCIDENTAL CHEMICAL CORPORATION

For the property at: 800 CHESTNUT STREET, REDWOOD CITY, SAN MATEO COUNTY

FINDINGS

The California Regional Water Quality Control Board, San Francisco Bay Region (herein after called the Regional Board), finds that:

1. SITE DESCRIPTION Rohm and Haas Company is the current owner of the property (approximately 11 acres) located at 800 Chestnut Street, Redwood City, San Mateo County, California. Rohm and Haas purchased the property from Diamond Shamrock Chemicals Company ("Diamond Shamrock") in 1984. (See Figure 1-1)

   The Site was operated as a resin manufacturing facility which produced phenol/formaldehyde, styrene, and epoxy resins from the 1940's until it was decommissioned in 1987. Subsequently, all structures have been demolished. The Site is currently vacant and is being considered for redevelopment. Raw materials used in the manufacturing process were transported by railcar and stored in above ground tanks in the northern portion of the Site. The materials were used as part of the resin manufacturing process.

   The raw materials were also stored in the tank farm located at the western portion of the Site. A waste pond is believed to have been located in the western area of the Site. In addition, an auto body and paint shop were also located on the southern portion of the Site.

2. SITE HISTORY In the late 1940's, Chemical Process Company began manufacturing phenol/ formaldehyde resins. In the early 1950's, they initiated styrene/divinylbenzene and epoxy resin manufacturing. In 1962, Diamond Alkali Company purchased the property and continued the production of phenol/formaldehyde, styrene, and epoxy resins. Diamond Alkali Company then merged with Shamrock Oil and Gas Company in 1967 and became Diamond Shamrock. Following the merger, polyester resins were also manufactured at

the Site until 1972 by Diamond Shamrock.

Rohm and Haas acquired the property in May of 1984. According to Rohm and Haas, immediately after acquiring the Site they ceased operation of all processes except the phenol/formaldehyde resin operation which was continued until 1985 and the styrene/divinyl benzene resin manufacturing which was continued through 1986. Equipment was cleaned and dismantled beginning in 1987 and all buildings were dismantled in 1987.

3. REGULATORY STATUS

Previous studies indicate that both the soil and groundwater at the Site have been contaminated by several chemical constituents used in the manufacturing process. The most prevalent include trichlorethylene (TCE), tetrachloroethylene (PCE), dichlorobenzene (DCB), and chlorobenzene (CB). In addition, total petroleum hydrocarbons have been detected in the area of the former auto body shop and plant unloading area.

a. Rohm and Haas

Rohm and Haas is considered a discharger because of its ownership of the Site. It still remains unclear whether the processes that Rohm and Haas continued to operate during their ownership of the Site contributed to the soil and groundwater contamination. Rohm and Haas will continue to be named as a primary Discharger until such information can be provided regarding chemical usage at the Site during their ownership that supports the claim that they did not contribute to the soil and groundwater contamination that has been detected at the site.

b. Occidental Chemical

Occidental Chemical Corporation ("Occidental") is a discharger because it is the corporate successor to Diamond Shamrock who owned and operated the facility from 1962 until 1984. Diamond Shamrock merged with Occidental subsequent to selling the Site to Rohm and Haas, thus making Occidental the corporate successor to Diamond Shamrock.

c. Rohm and Haas and Occidental are hereinafter referred to as the "Dischargers".

4. HYDROGEOLOGY Subsurface investigations have identified three water-bearing zones beneath the Site. The upper zone (first sand zone) occurs at 8 to 13 feet below ground surface and appears to be relatively continuous. It ranges in thickness from 3 to 16 feet. There is an abundance of coarse,

relatively well-graded sand and gravel trending north-south through the center of the Site. These deposits are interpreted as a buried stream channel. Groundwater occurs in this zone approximately seven feet below ground surface (bgs) and generally flows to the north.

The second sand zone occurs between 35 to 50 feet bgs and appears to be laterally discontinuous. This zone ranges in thickness from 8 to 15 feet. A sequence of silt and clay, interbedded with clayey and silty sands separates the two water bearing zones. On the southern portion of the Site, a distinct sand and gravel layer is present within this zone; however, at the northern edge of the property distinct beds of the sands are present in this zone, but the sands are generally clayey or silty. The groundwater gradient measured within this zone is generally toward the northwest.

Sandy layers occurring between 75 to 82 feet bgs are referred to as the third sand zone. The third sand zone is 3 to 3.5 feet in thickness and is underlain by silts and clays to a depth of approximately 100 feet bgs. The groundwater within this formation has not been measured with respect to gradient direction.

5. ADJACENT PROPERTIES Land uses in the area vary from residential to commercial and light industrial. A shopping center borders the north side of the subject property which was a manufacturing facility which was operated by the National Seal and Bearing Company. The manufacturing facility was located at 1301 Broadway and used solvents which were stored in above ground storage tanks as identified in the 1968 Sanborn Map. These tanks may be a possible source of groundwater contamination. Small commercial offices are located at the northwestern boundary of the Site. The San Mateo County vehicle maintenance yard runs along the southern boundary of the Site along Spring Street. Hoover Elementary School is located directly across Woodside Road, southeast of the Site. Residential areas are located west of the Site, east of the elementary school. (See Figure 1-1)

   The groundwater contamination plume coming from the subject site has been detected approximately 1,200 feet north of the site. (See Figure 1-2) Several other dischargers have been identified within the plume boundaries, mainly with leaking underground storage tanks. Should investigation by the named dischargers determine that probable contribution of pollution exists from these sites, and is hindering the remediation efforts set forth by the requirements herein, further Board action (issuance of separate Cleanup and Abatement Orders) may be necessary to include these off-site sources.

6. SUBSURFACE INVESTIGATIONS Three Site investigations (The Mark Group in 1985, and Bechtel Environmental in 1986 and 1989) have been performed to determine the extent of chemical contamination in the soil and groundwater

due to past manufacturing operations. A biological risk assessment was later performed by Ecology and Environment in 1988. According to the reports, a release of trichloroethylene (TCE), tetrachloroethylene (PCE), dichlorobenzene (DCB), chlorobenzene, and chromium has occurred at the Site. Soil and groundwater in both the first sand zone and second sand zone aquifers have been impacted with these and other various chemicals. The contamination has migrated off-site and has impacted several other properties within the vicinity.

Currently an investigation is underway to determine the extent of soil contamination on-Site, and to delineate the vertical and horizontal extent of the groundwater contamination.

7. GROUNDWATER CONTAMINATION The groundwater containing TCE, PCE, DCB, and CB has impacted the first and second water bearing formations. The concentrations range as high as 17,000 parts per billion for the constituents named. The plume has been detected approximately 1,200 feet north of the Site. The down gradient extent of the plume has not yet been determined.

Several other dischargers have been identified within the plume boundary that have leaking underground storage tanks. Four of the sites identified to date will require further remedial actions. The primary constituents from these tanks are total petroleum hydrocarbons as either gasoline, diesel, or waste oil. The owner or responsible party for each site has been notified about the upcoming remedial activities for the subject site. Each discharger has been asked for its full cooperation in the cleanup of the groundwater within the region. Regulation of the dischargers under separate Site Cleanup Requirements is presently being pursued.

8. INTERIM REMEDIAL ACTIONS Interim remedial actions, including soil aeration and soil removal, have been taken by Rohm and Haas. Approximately 7,200 cubic yards of contaminated soil found to contain the highest levels of contamination were removed in 1989. Although some soil removal has been done, it remains unclear what levels of contamination, if any, still remain in the on-Site soils. During all three subsurface investigations, groundwater contamination was detected. However, no interim groundwater remedial actions have ever been taken, resulting in the extensive off-Site migration of the contaminated groundwater.

9. SCOPE OF THIS ORDER This Order contains tasks for the completion of soils and groundwater characterization at the Site; evaluation of remedial actions for on-Site soil contamination; completion of groundwater characterization off-Site in both the first and second sand zone aquifers; evaluation and implementation of off-Site groundwater controls to arrest the migration of contamination emanating from the Site; implementation of final cleanup actions for soils on-

Site and groundwater both on-Site and off-Site caused by the contamination emanating from the Site. These tasks are necessary to alleviate the threat to surface and groundwater posed by further migration of chemicals originating from the Site, and to provide a substantive technical basis for designing and evaluating the effectiveness of final cleanup alternatives.

10. The Board adopted a revised Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) in December 1991. Proposed Basin Plan amendments were adopted by the Regional Board in September and October 1992 and are awaiting State Board approval. The Basin Plan and amendments contain water quality objectives and beneficial uses for the central San Francisco Bay and contiguous surface waters and groundwater.

11. The "first", "second", and "third" groundwater zones currently have no existing use. The potential beneficial uses of these groundwater zones underlying and adjacent to the facility include:

    a. Industrial process water supply
    b. Industrial service water supply
    c. Municipal and Domestic water supply
    d. Agricultural water supply

12. The nearest surface water body to the Site, approximately 1 1/2 miles away, is Redwood Creek. The existing potential beneficial uses of Redwood Creek include:

    a. Municipal and Domestic water supply
    b. Agricultural water supply
    c. Freshwater replenishment
    d. Water contact recreation
    e. Non-contact water recreation
    f. Fresh warm water habitat
    g. Fresh cold water habitat
    h. Wildlife habitat
    i. Fish spawning
    j. Shellfish harvesting

13. The Dischargers have caused or permitted, and threaten to cause or permit waste to be discharged or deposited where it is or probably will be discharged to waters of the State and create or threaten to create a condition of pollution or nuisance.

14. This action is an Order to enforce the laws and regulations administered by the Regional Board. This action is categorically exempt from the provisions of the

CEQA pursuant to Section 15321 of Title 14 of the California Administrative Code, Enforcement Actions by Regulatory Agencies.

15. The Regional Board has notified the Dischargers, responsible parties and interested agencies and persons of its intent under California Water Code Section 13304 to prescribe Site Cleanup Requirements for the discharge and provided them with the opportunity for a public hearing and an opportunity to submit their written views and recommendations.

16. The Regional Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED, pursuant to Section 13304 of the California Water Code, that the Dischargers shall cleanup and abate the effects described in the above findings as follows:

A. PROHIBITIONS

1. The discharge of wastes or hazardous materials in a manner which will degrade water quality or adversely affect the beneficial uses of the waters of the State is prohibited.

2. Further significant migration of pollutants through subsurface transport to waters of the State is prohibited.

3. Activities associated with subsurface investigation and cleanup which will cause significant adverse migration of pollutants are prohibited.

B. SPECIFICATIONS

1. Remediation Activities: The Dischargers shall conduct Site investigation, monitoring and remediation activities as needed to define the current hydrogeologic conditions, to define the lateral and vertical extent of soil contamination on-Site, to define the lateral and vertical extent of groundwater pollution on or emanating from the Site, remediate as may be required any soil contamination on-Site, and remediate as may be required any groundwater pollution on or emanating from the Site. Should monitoring results show evidence of pollutant migration, the source of which is the Site, additional characterization and remediation may be required.

2. Nuisance Clause: The storage, handling, treatment or disposal of soil or groundwater containing pollutants shall not create a nuisance as defined in Section 13050(m) of the California Water Code.

3. Clean-up Levels - Soils: The cleanup goals for on-Site contaminated soils are as follows. For total volatile organic compounds (total VOC's) the residual soil concentration shall be equal to or less than 1 ppm, and for total petroleum hydrocarbons (TPH) the residual soil concentration shall be equal to or less than 10 ppm. All samples shall be analyzed using applicable EPA analytical methods or methods shown through State or peer review approval to be equivalent to EPA methods.

   The soil cleanup levels can be appropriately modified by the Executive Officer if the Dischargers are able to demonstrate, with site-specific data, that higher levels of contaminants in the soil will not threaten the waters of the State and that human health and the environment are protected. If any contaminants are left in the soil in concentrations in excess of the cleanup levels, follow up groundwater monitoring will be required.

4. Clean-up Levels - Groundwater: With respect to any polluted groundwater to which the source of contaminants is the Site, final cleanup levels and goals for polluted groundwater, including sources of drinking water, on-Site and off-Site, shall be background water quality as feasible, in accordance with the State Water Resources Control Board's Resolution No. 68-16, "Statement of Policy with Respect to Maintaining High Quality of Waters in California", and other applicable standards. Final cleanup standards shall be based on an evaluation of the cost, effectiveness of the proposed remedy, and a risk assessment to determine any affects on human health and the environment, and shall be approved by the Regional Board. These levels shall have a goal of reducing the mobility, toxicity, and volume of pollutants.

5. Reclamation: If groundwater extraction and treatment is considered as an alternative, the feasibility of water reuse, re-injection, and disposal to the sanitary sewer must be evaluated. Based on the Regional Board Resolution 88-160, the Dischargers shall optimize, with a goal of 100%, the reclamation or reuse of groundwater extracted as a result of cleanup activities. The Dischargers shall not be found in violation of this Order if documented factors beyond the Dischargers' control prevent the Dischargers from attaining this goal, provided the Dischargers have made a good faith effort to attain this goal. If reuse or re-injection is part of a proposed alternative, an application for Waste Discharge Requirements may be required. If discharge to waters of the State is part of a proposed alternative, an application for an NPDES permit must be completed and submitted, and must include the evaluation of the feasibility of the water reuse, re-injection, and disposal to the sanitary sewer.

C. PROVISIONS

1. The Dischargers shall comply with the Prohibitions and Specifications above, in accordance with the following time schedule and tasks. In performing the tasks, should the Dischargers experience difficulty with obtaining access to other properties, the Regional Board, as provided for under State Board Resolution 92-49, shall require uncooperative landowners and tenant of property affected by the discharge to cooperate or, if necessary, to participate in investigation, cleanup, and abatement.

   a. **TASK**: SUBMIT RESULTS OF FOCUSED ENVIRONMENTAL INVESTIGATION

      DUE DATE: April 1, 1993

      Description: The Dischargers shall submit a technical report acceptable to the Executive Officer containing the results of the investigation as specified in the Workplan produced by Wahler Associates and approved by the Regional Board by letter dated October 29, 1992.

   b. **TASK**: SUBMIT A GROUNDWATER MONITORING PLAN

      DUE DATE: April 1, 1993

      Description: Submit a groundwater monitoring plan, acceptable to the Executive Officer, that addresses monitoring the groundwater wells representative of the conditions found in the First and Second sand zones on and off the site. The plan shall include monitoring of the groundwater in the areas where trichloroethylene (TCE), tetrachloroethylene (PCE), dichlorobenzene (DCB), chlorobenzene, total petroleum hydrocarbons and other chemical constituents that originated from the Rohm and Haas facility and have thus far been detected. The monitoring plan may be modified based upon the results obtained from the current investigation and subsequent investigations with concurrence from the Regional Board staff.

   c. **TASK**: SUBMIT A WORKPLAN FOR ADDITIONAL GROUNDWATER INVESTIGATION AND CHARACTERIZATION

DUE DATE: May 1, 1993

Description: The Dischargers shall submit a workplan acceptable to the Executive Officer for additional investigation necessary to fully characterize the groundwater contamination emanating from the Site and to identify any other potential sources that may be contributing to the pollution.

d. **TASK**: IMPLEMENTATION OF GROUNDWATER MONITORING PLAN

DUE DATE: Commence within ninety days after the written approval of the groundwater monitoring plan.

Description: The Discharger shall implement a quarterly monitoring program as outlined in TASK (b).

e. **TASK**: SUBMIT THE RESULTS OF THE ADDITIONAL INVESTIGATION AS OUTLINED IN TASK (c).

DUE DATE: Ninety days after approval of the workplan for additional investigation.

Description: The Dischargers shall submit a technical report acceptable to the Executive Officer containing the results of the investigation as specified in the workplan outlined in TASK (c).

f. **TASK**: SUBMIT A SITE REMEDIATION PLAN ADDRESSING ANY ON-SITE SOIL CONTAMINATION FOUND ON THE ROHM AND HAAS PROPERTY AND ANY GROUNDWATER POLLUTION FOUND AS A RESULT OF TASKS (a) and (b), ON AND OFF THE PROPERTY THAT ORIGINATED FROM THE SUBJECT SITE.

DUE DATE: Within 60 days of the submittal of the results of the Additional Investigation and Groundwater Characterization as outlined in TASK (c).

Description: Submit a Site Remediation Plan, acceptable to the Executive Officer, that fully describes any remedial actions to be taken to control, abate and/or remove pollution (the source of which is the Site) found in the soils on Site and the groundwater on and off-Site in both the first and second sand zone aquifers. The plan shall include: a discussion of all existing data, a review of the effectiveness of the interim remedial measures from the

previous investigations, preliminary plans for interim groundwater remedial action as deemed necessary, preliminary plans of proposed extraction and treatment systems, and a comprehensive schedule for implementation of such remedial action(s).

g. **TASK**: IMPLEMENTATION OF REMEDIAL ACTIONS FOR ON-SITE SOILS AND GROUNDWATER IN BOTH FIRST AND SECOND SAND ZONES ON AND OFF SITE

DUE DATE: Commence within sixty days after the Executive Officer's written approval of the remedial action plan pursuant to Section C.1.f above.

i. **TASK**: SUBMIT A REPORT ON THE EFFECTIVENESS OF THE FINAL REMEDIAL ACTION FOR BOTH SOILS AND GROUNDWATER

DUE DATE: One year after implementation of Remedial Action Plan and annually thereafter

Description: Submit a technical report, acceptable to the Executive Officer, which evaluates the effectiveness of any required remedial actions for the soil and groundwater emanating from the Rohm and Haas property. This report should include implementation and/or modifications of additional measures necessary to fully remediate or contain the groundwater.

2. The Dischargers shall submit to the Regional Board acceptable reports on the compliance with the requirements of this Order, and acceptable activity monitoring reports that contain descriptions and results of work and analysis performed. These reports are to be submitted according to a program prescribed by the Regional Board and as outlined below.

a. **ON A QUARTERLY BASIS,** the Dischargers shall submit status reports, which may be prepared in a business letter format, documenting compliance with this Order commencing on April 15, 1993. Thereafter, reports shall be due **quarterly** on the 15 of each ensuing July, October, January, and April. Each quarterly report shall cover the previous calendar quarter and include at least the following information:

i. Summary of the work completed since submittal of the previous report, and work projected to be completed before the submittal of the next report.

ii. Identification of any identified obstacles which may threaten compliance with the schedule set forth by this Order, and what actions are being taken to overcome these obstacles.

b. **ADDITIONALLY ON A QUARTERLY BASIS,** technical reports documenting quarterly groundwater monitoring shall be submitted by the Dischargers to the Regional Board commencing **October 15, 1993,** and covering the previous calendar quarter. Each quarterly monitoring report shall include, but not be limited to, the following information:

i. Cumulative tabulated results of free product measurements and water quality sampling analyses for all monitoring wells both on and off-Site. This data shall be accompanied by contamination isoconcentration plume maps for each chemical constituent of concern for both first and second water bearing formations based upon the results of the recent sampling event.

ii. A cumulative tabulation of all well construction details and quarterly water level measurements.

iii. Quarterly updated water table and piezometric surface maps, based upon the most recent water level measurements for all affected water bearing zones for all on-Site and off-Site wells.

iv. A cumulative tabulation of volume of extracted groundwater, quarterly chemical analyses results for all extraction wells, and a report indicating the pounds of pollutants removed during the quarter and total pounds of pollutants removed to date.

v. Reference diagrams and maps including any updated geologic cross sections describing the hydrogeologic conditions of the Site, and appropriately scaled and detailed base maps showing the location of all monitoring wells and extraction wells, and identifying facilities and structures.

c. **ON AN ANNUAL BASIS,** technical reports on the progress of compliance with all requirements of this Order and any proposed modifications which could increase the effectiveness of final cleanup actions shall be submitted to the Regional Board by the

Dischargers. The first annual compliance report is due **December 31, 1993**, and would cover the previous calendar years activities. Annual reports may include quarterly reports due concurrently. The annual progress reports shall include, but not necessarily be limited to, progress on site investigation and remediation activities, operation and implementation of interim and final remediation systems, effectiveness of remediation actions and systems, and an evaluation of the feasibility of meeting the groundwater and soil cleanup goals established by this Order.

3. The dischargers may, by written request, seek modifications or revisions, or termination of this Order or any program, plan, or schedule submitted pursuant to this Order at any time. This Order and any applicable program, plan, or schedule may be modified, terminated, or revised by the Regional Board.

4. If the Dischargers are delayed, interrupted or prevented from meeting one or more of the completion dates specified in this Order, the Dischargers shall promptly notify the Executive Officer. If, for any reason, the Dischargers are unable to perform any activity or submit any document within the time required under this Order, the Dischargers may make a written request for a specified extension of time. The extension request shall include justification for the delay, and shall be submitted to the Regional Board in advance of the date on which the activity is to be performed or the document is due. The Regional Board staff may propose an amendment to the Order and bring the matter to the Board for consideration.

5. Nothing in this Order is intended or shall be construed to limit or preclude any right the dischargers have to seek administrative and/or judicial review of any orders and determinations of the Board and/or its staff.

6. All hydrogeological plans, specifications, technical reports and documents shall be signed by or stamped with the seal of State registered geologist, registered civil engineer, or certified engineering geologist.

7. All samples shall be analyzed by a State certified laboratory or laboratory accepted by the Regional Board using approved EPA methods for the type of analysis to be performed. All laboratories or the consultant shall be required to maintain quality assurance/quality control records for Regional Board review for a period of six years.

8. The Dischargers shall maintain in good working order, and operate in the

normal standard of care, any facility or control system installed to achieve compliance with the requirements of this Order.

9. Copies of all correspondence, reports, and documents pertaining to compliance with the Prohibitions, Specifications, and Provisions of this Order shall be provided to the following agencies:

   a. San Francisco Bay Regional Water Quality Control Board
   b. San Mateo County Health Department
   c. Cal-EPA, Department of Toxic Substances Control
   d. City of Redwood City

10. The Dischargers shall permit, within the scope of each of their authorities, the Regional Board or its authorized representative, in accordance with Section 13267 (c) of the California Water Code:

   a. Entry upon dischargers' premises in which any pollution sources exist, or may potentially exist, or in which any required records are kept, which are relevant to this Order.

   b. Access to copy any records required to be kept under the terms or conditions of this Order.

   c. Inspection of any monitoring equipment or methodology implemented in response to this Order.

   d. Sampling of any groundwater or soil which is accessible, or may become accessible, as part of any investigation or remedial action program undertaken by the Discharger.

11. The Dischargers or if and to the extent a Discharger has any ownership or present possessory interest in or to the Site, such Discharger shall file a report in a timely manner on any changes in Site occupancy and ownership associated with this facility/property described in this Order.

12. If in performing any work pursuant to this Order, any hazardous substance is discharged in or on any waters of the State, or discharged and deposited where it is, or probably will be discharged in or on any waters of the State, the Dischargers shall report such a discharge to this Board, at (510) 286-1255 on weekdays during office hours from 8:00 a.m. to 5:00 p.m., and the Office of Emergency Services at (800) 852-7550 during non-office hours. A written report shall be filed with the Board within five (5) working days and shall contain information relative to: the nature of the waste or pollutant, quantity involved, duration of

incident, cause of spill, Spill Prevention, Control and Countermeasure Plan in effect, if any, estimated size of affected area, nature of effects, corrective measures that have been taken or planned, and a schedule of these activities, and persons notified.

13. Any provisions of this Order substantially identical to provisions which the State Water Board or a court of law determines to be in excess of the Board's legal authority shall have no force or effect in this Order.

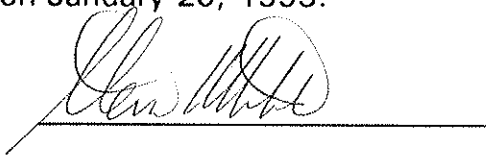
14. This Order is intended to be the primary regulating document by which Site cleanup shall proceed for the Dischargers and properties identified herein, with the Regional Board as lead agency. Rohm and Haas and Occidental shall establish a primary contact representing the named Dischargers and submit the named representative to the Regional Board.

15. If the Executive Officer finds that the Discharger(s) have failed to comply with the Provisions of this Order, he is authorized to issue a complaint for Board consideration of Administrative Civil Liabilities, or after approval of the Board Chairperson, to request the Attorney General to take appropriate action against the Discharger(s), including injunctive and civil remedies, if appropriate.

16. Pursuant to Section 13304 of the California Water Code, the Discharger(s) is (are) hereby notified that the Regional Board is entitled to, and may seek reimbursement for, all reasonable costs actually incurred by the Regional Board to investigate unauthorized discharge of waste and to oversee cleanup of such waste, abatement of the effects thereof, or other remedial actions. Upon receipt of a billing statement for such costs, the Discharger(s) shall reimburse the Regional Board.

17. The Regional Board will review this Order periodically and may revise the requirements when necessary.

I, Steven R. Ritchie, Executive Officer, do hereby certify that the foregoing is a full, true and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on January 20, 1993.



Steven R. Ritchie
Executive Officer

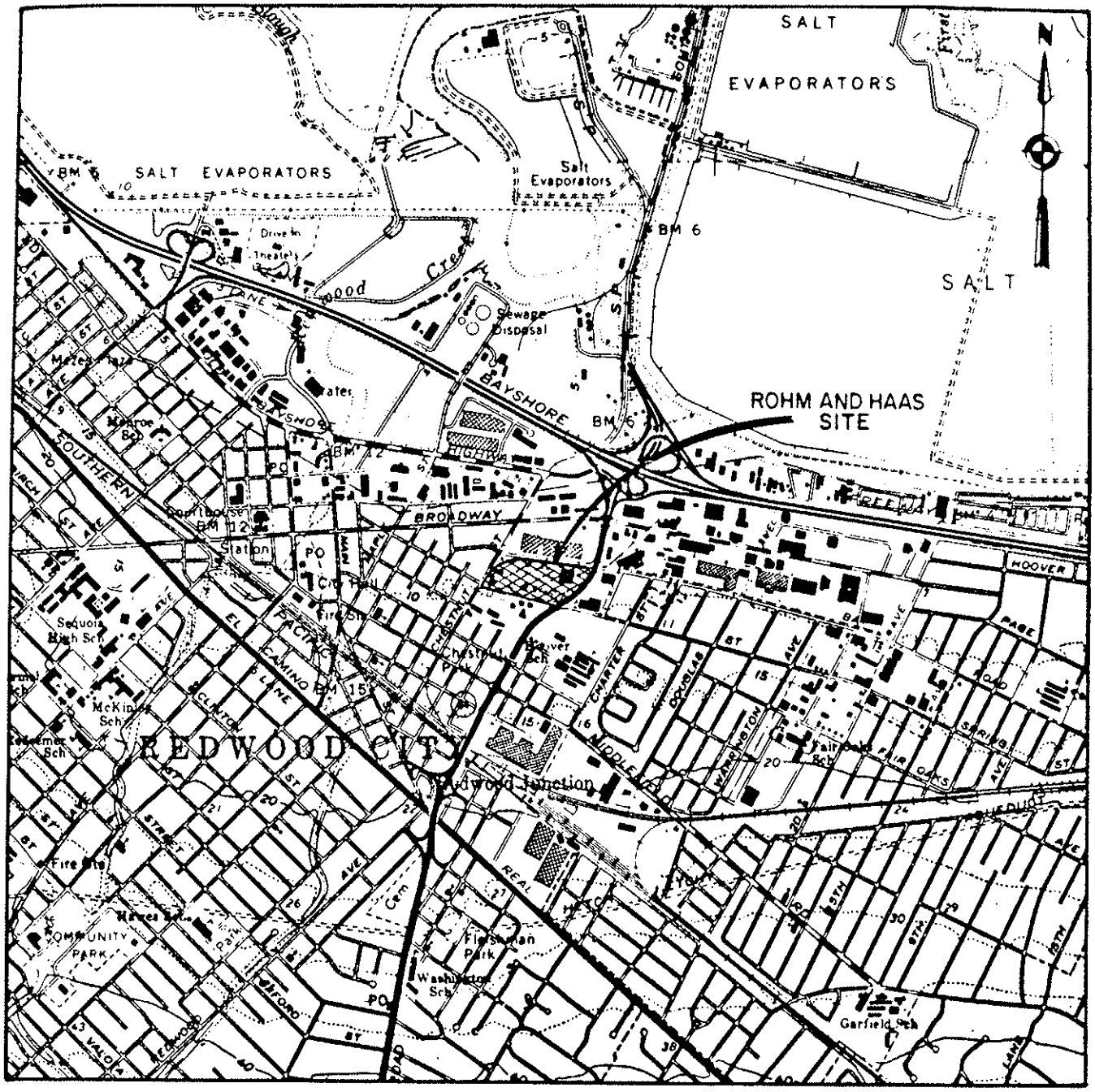


Figure 1-1 Site Location Map

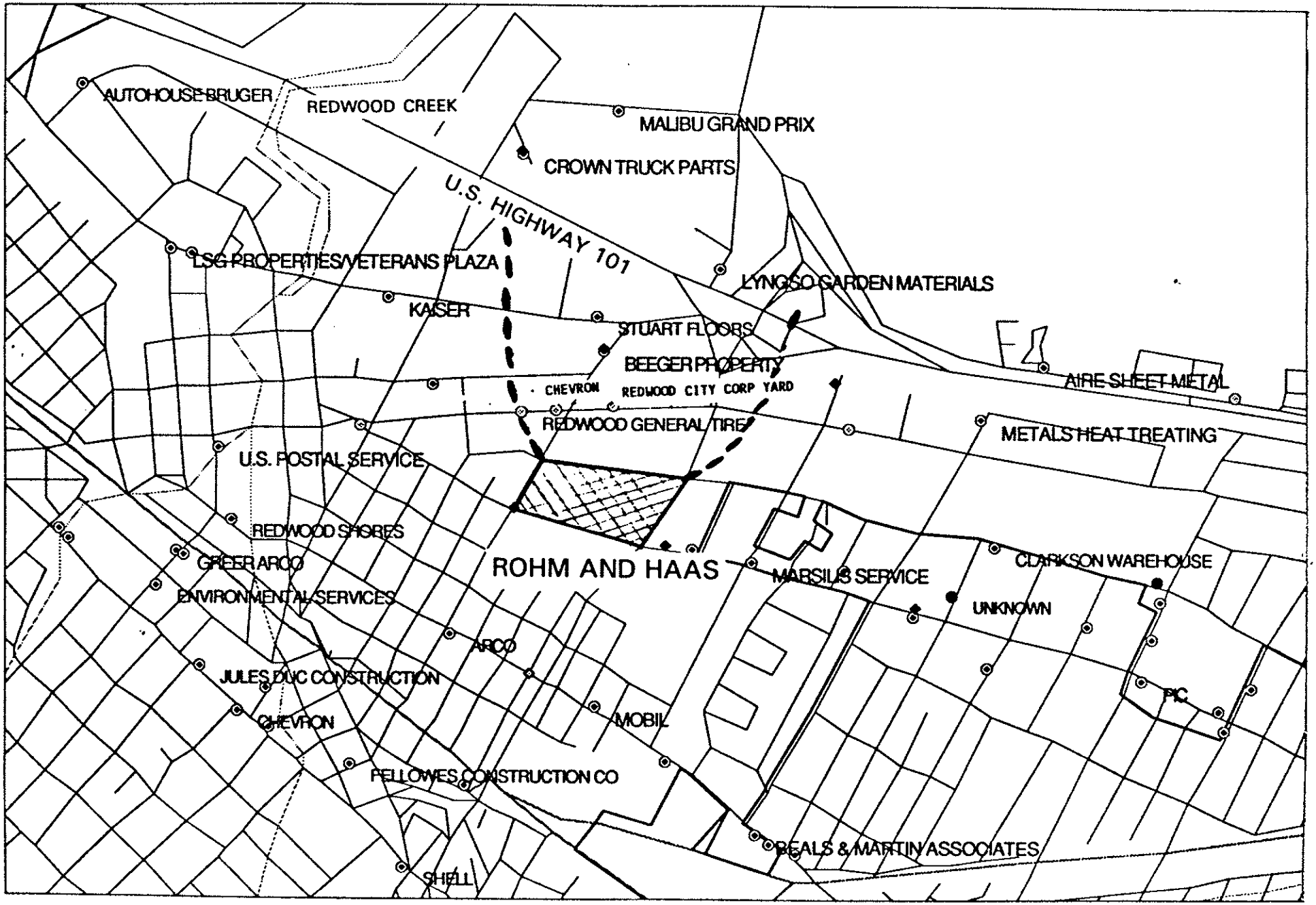


Figure 1-2 Surrounding Sites and Extent of Groundwater Contamination
Rohm and Haas Redwood City, San Mateo County